

## REMARKS

Claims 1-15 are pending in the present application. The Examiner objected to the specification, and to claims 1, 3, 4, 6, 7, and 15. The Examiner also rejected claims 1-11 and 15 under 35 U.S.C. §101, rejected claims 1-15 under 35 U.S.C. §112, second paragraph, and rejected claims 1-15 under 35 U.S.C. §103(a). Applicants have amended the specification and claims 1, 3-7, and 15. No new matter has been introduced.

### **Specification Objections**

Applicants have amended pages 3, 4, 5, 6, 7 and 8 of the specification to correct the informalities notes by the Examiner. With regard to the Examiner's uncertainty how a byte sequence has plural states including an ASCII state (page 6, line 19), the Examiner is referred to the **Detailed Description of the Invention** for a full explanation, in particular, the first full paragraph on page 8. Applicant is unclear as to the Examiner's uncertainty regarding how ASCII is followed by GB1 when GB1 follows ASCII, as this phrase is clear and self-consistent. Regarding the Examiner's uncertainty regarding first double-byte bytes or second double-byte bytes on page 9 line 11, Applicant notes that a first double-byte byte means the first byte of a double-byte sequence, that is, the GB1 byte of a GB1-GB2 byte sequence. Similarly, a second double-byte byte means the second byte of a double-byte sequence, that is, the GB2 byte of a GB1-GB2 byte sequence. Reconsideration and withdraw of these objections are respectfully requested.

Pages 3, 8, and 9, along with claims 5 and 15, were amended to correct a typographical error. The correction involved changing the word "transmission" to "transition", as noted by the Examiner with respect to page 7, line 5.

Page 8 line 13-14 were amended to correct a typographical error, i.e. that a second byte (state GB2) may be followed by an ASCII character (state A), but never by a first byte (state GB1). The correction states that a GB2 can be followed by an ASCII or a GB1, but not by a GB2. The corrected recitation is supported by FIG. 2 and the rest of the specification (see, e.g., Table 1 and the byte sequences on pages 16 and 17).

## **Claim Objections**

The Examiner objected to claims 1, 3, 4, 6, 7, and 15 due to some informalities. Regarding the Examiner's uncertainty regarding the phrase "an ASCII state is also designated as a noise state" in claim 3, Applicant urges that this phrase means that an ASCII state can be designated as a noise state, as explained on pages 12-13 of the specification. Regarding claim 6, Applicant notes that sigma refers to the total number of states. Applicant thanks the Examiner for bringing these informalities to his attention. Reconsideration and withdraw of these objections are respectfully requested.

## **Section 112 Rejections**

The Examiner rejected claims 1-15 under 35 U.S.C. §112, second paragraph, as being indefinite. In particular, the Examiner was unclear as to what is meant by defining a state for a byte sequence. In response, Applicant refers the Examiner to the specification, page 8, first full paragraph, where it is described how the state of a byte sequence is defined by the type of byte in the byte sequence. For example, an ASCII state is defined for a byte sequence by the occurrence of an ASCII character in the byte sequence. Thus, Applicant urges that the phrase "defining a plurality of states for the byte sequence" in claims 1, 12 and 15, is clear within the meaning of section 112, second paragraph.

The Examiner was also unclear as to why byte states are designated as noise states when the byte sequence is valid. Applicant urges that the purpose of the method recited by claim 1 is to validate a byte sequence: one does not know *a priori* whether a byte sequence is valid. Designating a state as a noise state is part of the claimed method of validating the byte sequence. Thus, when an erroneous byte is identified, the erroneous byte is associated with the noise state. Thus, Applicant urges that the phrase "designating one or more noise states from among the plurality of states" in claims 1 and 12, and the phrase "designating at least one ASCII state as a noise state" in claim 15, are clear within the meaning of section 112, second paragraph. Reconsideration and withdraw of these section 112 objections are respectfully requested.

## Section 101 Rejections

The Examiner rejected claims 1-11 and 15 under 35 U.S.C. §101 as claiming a mathematical formula or algorithm.

Applicant respectfully traverses these rejections.

Applicant urges that the controlling law governing the patentability of computer related inventions are the two Federal Circuit decisions, State Street Bank & Trust Co. v. Signature Financial Group, Inc., 47 USPQ2d 1596 (Fed. Circ. 1998), cert denied, 525 U.S. 1093 (1999), and AT&T Corp. v. Excel Communications, Inc., et al., 50 USPQ2d 1447 (Fed. Circ. 1999). These two decisions hold that a claim directed to a mathematical algorithm is patentable if the algorithm-containing invention, as a whole, produces a tangible, useful, concrete result. The algorithm need not be incorporated or embedded in hardware or a computer readable medium.

Applicant's method claims 1 and 15 are directed to a method for validating a byte sequence. As discussed in Applicant's specification, this has utility in the processing of byte streams encoding complex character sets, such as Chinese characters. Applicant notes that a byte stream is a tangible, physical object, namely an electronic signal, thus Applicant's claimed method is a method of transforming one electronic signal into another electronic signal. The method of the invention can recognize invalid characters and sequences in a byte stream, so that these invalid characters and sequences can be removed from the byte stream, thus preventing applications that process these byte streams from crashing. The byte stream signal output by the method of Applicant's claims 1 and 15 differs from the input signal by the removal of noise as represented by the invalid bytes. Thus, the method of Applicant's invention is clearly useful and produces a tangible result within the meaning of section 101, and the application of the mathematical algorithm used in Applicant's claimed method is not pre-empted. Therefore, Applicant urges independent claims 1 and 15, and dependent claims 2-11, are patentable under section 101, under the law as enunciated by the Federal Circuit in its State Street and AT&T decisions. Further, Applicant urges that it is unnecessary to

amend the methods claimed in Applicant's claims 1 and 15 to be incorporated or embedded in hardware or a machine readable medium. Reconsideration and withdraw of the section 101 rejection are respectfully requested.

### **Section 103 Rejections**

The Examiner rejected claims 1-15 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 5,898,385 (Makino), in view of Tugnait, Adaptive Estimation and Identification for Discrete Systems with Markov Jump Parameters, IEEE, 1982.

Applicant respectfully traverses these rejections.

Applicant urges that the Examiner has failed to make out a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the combination of prior art references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

Makino is directed to a signal processing means that eliminates wasted time in a character message transmitted to a radio paging receiver. Makino's signal processing means uses a segmentation scheme to segment received data according to a predetermined number of bits based on an identification signal preceding the data. Makino discloses 4-bit schemes, 8-bit schemes, and 16-bit schemes. Although these segmentation schemes could arguably correspond to states within the meaning of Applicant's claimed method, none of these states is assigned to be a noise state, much less noise states or noise in a byte stream that is to be deleted from the byte stream. Rather, Makino compares received data with one or more predefined codes, and data that does not match one of these codes is replaced by a character code corresponding in bit length to the previously specified segmented bit length. The

purpose of the predefined codes is to change the segmentation schemes, thus the presence of received data matching one of the predefined codes causes a corresponding change in segmentation scheme. Thus, Makino does not disclose generating a most probable state sequence for the byte sequence, nor utilizing said most probable state sequence to identify all noise in the byte sequence, nor localizing said noise in said noise states, as claimed in Applicant's claims 1, 12, and 15.

The Examiner cited Tugnait for disclosing state transition means with a transition probable matrix. However, Tugnait does not disclose the elements of Applicant's claims 1, 12, and 15 that are also absent from Makino.

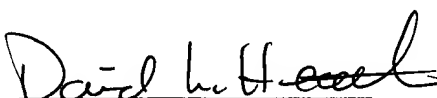
Thus, since the combination of Makino and Tugnait fails to teach or suggest all of the claim limitations of Applicant's claims 1, 12, and 15, a *prima facie* case of obviousness of claims 1, 12 and 15 cannot be sustained. Reconsideration and withdraw of these rejections are respectfully requested.

Claims 2-11 depend from claim 1, and are thus patentable for at least the same reasons as claim 1. Claims 13-14 depend from claim 12, and are thus patentable for at least the same reasons as claim 12. Reconsideration and withdraw of these rejections are respectfully requested.

**CONCLUSION**

Applicant urges that claims 1-15, as amended, are in condition for allowance for at least the reasons stated. Early and favorable action on this case is respectfully requested.

Respectfully submitted,

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